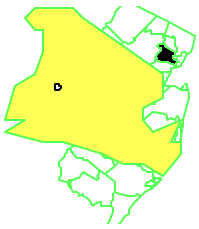
# GLEN RIDGE RADIUM SITE

## NEW JERSEY

EPA ID# NJD980785646



**EPA REGION 2**

CONGRESSIONAL DIST. 08

Essex County

Glen Ridge

## Site Description

The 90+ acre Glen Ridge Radium Site includes more than 425 residential properties and several municipal properties in the towns of Glen Ridge, Bloomfield and East Orange. The soil at the site is contaminated with radioactive waste materials suspected to have originated from nearby radium-processing facilities that operated in the early 1900s. Subsequently, houses were constructed on or near the radium waste disposal areas. Some of the radium-contaminated soil was used as fill in the low-lying areas, and some was mixed with cement for sidewalks and foundations. This site is similar to the Montclair/West Orange Radium site, which also contains radium-contaminated soils from the same sources. Because of their proximity and the similarity of the contamination present, the Montclair/West Orange and Glen Ridge Radium sites are being addressed jointly. It is estimated that 200,000 cubic yards of contaminated soil are scattered on public and private properties in the communities of both sites. In 1983, the State of New Jersey identified a number of homes with high levels of radon gas and radon decay products, as well as excessive levels of indoor and outdoor gamma radiation.

**Site Responsibility:** This site is being addressed through Federal and State actions.

**NPL LISTING HISTORY**
Proposed Date: 10/01/84
Final Date: 02/01/85

## Threats and Contaminants

The soil on the site is contaminated, to varying degrees, with radium. When this material is located in and around a home, it may result in high levels of radon gas and gamma radiation in the home. Radon is a decay product of radium and gamma radiation is the energy released during the decay process. People who are exposed to the radium, radon, radon decay products and elevated levels of gamma radiation may be at risk. In addition, accidental ingestion of soil may cause adverse health effects.

## Cleanup Approach

This site has been addressed in stages: emergency actions and long-term remedial phases focusing on cleanup of the soil, structures, and groundwater.

### Response Action Status

**Emergency Actions:** In 1983, the EPA installed temporary ventilation systems to reduce the radon concentrations in 38 homes included in this site and the Montclair/West Orange Radium site. In addition, shielding from gamma radiation was installed in 12 homes. The radon systems were upgraded to higher efficiency units in 1990 and 1991 at which time two additional units were installed.

**Soil and Structures:** In 1989, EPA selected a remedy to address the most severely contaminated properties, and deferred the selection of a remedy for the remaining less contaminated properties and contaminated public areas and streets for the 1990 Record of Decision. The selected remedy for all properties, regardless of the degree of contamination or property type, is the excavation and off-site disposal of all radium-contaminated soil, followed by restoration of the properties.

Remediation begins with an investigation of the contaminated property to determine the location, magnitude and extent of contamination. A design is then developed which details the method of excavation and restoration of the property. Remediation of a residential property can range from the removal of a small area of soil in the yard, to total excavation of material from the perimeter of the house and beneath the basement slab. In the most extensively contaminated properties, the homeowner must be relocated while the cleanup is in progress.

**Groundwater:** The EPA is conducting a study to determine whether the groundwater has become tainted by the contaminated soil. Groundwater data, summarized in the January 2003 Remedial Investigation Report, showed elevated levels of radon. A Focused Feasibility Study is expected to be completed in winter 2004.

## Cleanup Progress 

The contaminated properties were categorized in phases, to address the most severe contamination first, and not cause undue stress from construction activities on any one specific residential area. The Pilot Phase and Phases I through VIII have been completed. The final phase of the soil cleanup project is Phase IX and it includes the cleanup of 20 residential properties. Phase IX soil excavation activities are expected to be completed by January 2005. To date, more than 140,000 cubic yards of contaminated soil have been excavated from the Glen Ridge, Bloomfield, and East Orange communities and disposed of off-site.